Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (currently amended): A transient light scattering shutter comprising:

~~first and second substrates;~~

a liquid crystalline material ~~disposed between said first and second substrates, said material~~ comprising a chiral liquid crystal capable of forming a transient light scattering state and a transparent state; and

a voltage source ~~coupled to said material and~~ operative to provide a varying voltage across said liquid crystalline material to switch said liquid crystalline material between said transparent state and said transient light scattering state.[[:]]

~~a first electric field across said material to form a first transparent state,~~

~~a second electric field across said material to form a second transparent state, only one of said first and second electric fields being present across said material at a given time, and~~

~~a transition from one of said first and second electric fields to the other of said first and second electric fields by decreasing the voltage magnitude of one of said electric fields to zero volts and then increasing the~~

~~voltage magnitude of the other of said electric fields from zero volts, said decreasing of voltage magnitude causing said material to form a transient light scattering state.~~

Claim 2 (currently amended): The transient light scattering shutter of claim 1 further comprising a heater operative to heat said liquid crystalline material to decrease transition time of said liquid crystalline material between said transparent state and said transient light scattering state.

Claim 3 (currently amended): The transient light scattering shutter of claim 1 further comprising a surfactant operative to ~~increase~~ decrease transition ~~speed~~ time of said liquid crystalline material between ~~at least one of~~ said ~~first and second~~ transparent ~~states~~ state and said transient light scattering state.

Claim 4 (canceled)

Claim 5 (original): The transient light scattering shutter of claim 1 wherein said chiral liquid crystal is selected from the group consisting of cholesteric liquid crystal, nematic liquid crystal, and smectic chiral liquid crystal.

Claim 6 (original): The transient light scattering shutter of claim 1 wherein said liquid crystalline material comprises a nematic liquid crystal and a chiral dopant.

Claim 7 (original): The transient light scattering shutter of claim 1 wherein said liquid crystalline material is substantially polymer free.

Claim 8 (original): The transient light scattering shutter of claim 1 wherein said chiral liquid crystal has a positive dielectric anisotropy.

Claim 9 (currently amended): The transient light scattering shutter of claim 1 wherein said varying voltage ~~source comprises~~ is a DC bipolar voltage ~~source~~.

Claim 10 (currently amended): The transient light scattering shutter of claim 1 wherein said ~~second electric field has a polarity opposite said first electric field~~ varying voltage reverses its polarity as said liquid crystalline material transitions successively from said transparent state through said transient light scattering state to said transparent state.

Claim 11 (currently amended): A system ~~operative to generate~~ for generating three-dimensional images, comprising:

a multi-surface optical device comprising:

a plurality of transient light scattering shutters arranged in an array, each of said transient light scattering shutters comprising ~~first and second substrates and~~ a liquid crystalline material ~~disposed between said first and second substrates~~, said liquid crystalline material comprising a chiral liquid crystal[[,]] ~~each said shutter having~~ capable of forming a transient light scattering state and a transparent state, and a voltage source ~~coupled to said shutters and~~ operative to provide a varying voltage across said liquid crystalline material to switch said liquid crystalline material between said transparent state and said transient light scattering state[[:]]

~~a first electric field across said material,~~

~~a second electric field across said material, only one of said first and second electric fields being present across said material at a given time, and~~

~~a transition from one of said first and second electric fields to the other of said first and second electric fields by decreasing the voltage magnitude of one of said electric fields to zero volts and then increasing the voltage magnitude of the other of said electric fields from zero volts~~; and

a first image projector operative to selectively project ~~each image from a set of~~ images onto [[a]] respective ones of said transient light scattering shutters[[,]] ~~said projected images together appearing as~~ to form a three-dimensional image.

Claim 12 (currently amended): The system of claim 11 further comprising a heater to heat said liquid crystalline material to decrease transition time of said liquid crystalline material between said transparent state and said transient light scattering state.

Claim 13 (currently amended): The system of claim 11 further comprising a surfactant operative to ~~increase~~ decrease transition ~~speed~~ time of said liquid crystalline material between ~~at least one of~~ said ~~first and second~~ transparent ~~states~~ state and said transient light scattering state.

Claim 14 (currently amended): The system of claim 11 further comprising a second image projector coupled to receive said projected images from said first image

projector, said second image projector comprising optics to project said three-dimensional image at a location in space distant from said multi-surface optical device, said projected three-dimensional image appearing to float in space.

Claim 15 (currently amended): The system of claim 11 further comprising a controller ~~that comprises a computer processor, said controller~~ operative to ~~control the state of each said shutter, wherein~~ provide one of said transient light scattering shutters ~~is~~ in said transient light scattering state to receive and display ~~said~~ a respective image, while maintaining ~~the other~~ rest of said transient light scattering shutters ~~are~~ in said transparent state to allow viewing of said respective image ~~on said one shutter~~.

Claim 16 (currently amended): The system of claim ~~15~~ 11 wherein ~~said controller is further operative to control said shutters during a plurality of cycles,~~ each of said transient light scattering shutters ~~being~~ is in said transient light scattering state ~~during a cycle different than the other said shutters~~ at a different time.

Claim 17 (currently amended): The system of claim 11 wherein said first image projector projects ~~each image of said set of~~ each of said images onto respective ones of said transient light scattering shutters at a rate of no less than about 35 Hz.

Claim 18 (currently amended): The system of claim 11 wherein said transient light scattering shutters are equally spaced apart from each other.

Claim 19 (currently amended): The system of claim 11 wherein said transient light scattering shutters are logarithmically spaced apart from each other.

Claim 20 (currently amended): The system of claim 11 wherein said ~~second electric field has a polarity opposite said first electric field~~ varying voltage reverses its polarity as said liquid crystalline material transitions successively from said transparent state through said transient light scattering state to said transparent state.

Claim 21 (canceled)

Claim 22 (currently amended): A method of ~~creating three-dimensional images~~ using ~~a transient light scattering shutter, said shutter comprising~~ a liquid crystalline material as a transient light scattering shutter, ~~said material comprising a chiral liquid crystal, said method~~ comprising the steps of:

applying a first electric field to said ~~shutter~~ liquid crystalline material comprising a chiral liquid crystal to form a ~~first~~ transparent state;

~~decreasing~~ adjusting said first electric field to zero ~~volts~~ to cause said liquid crystalline material to form a transient light scattering state; and

applying a second electric field to said ~~shutter~~ liquid crystalline material to form ~~a second~~ said transparent state.

Claim 23 (currently amended): The method of claim 22 wherein said first electric field and said second electric field ~~has a polarity~~ are in opposite ~~that of said first electric field~~ directions.

Claim 24 (currently amended): The method of claim 22 further comprising the step of heating said liquid crystalline material to ~~increase~~ decrease transition ~~speed~~ time

of said liquid crystalline material between ~~at least one of~~ said ~~first and second~~ transparent ~~states~~ state and said transient light scattering state.

Claim 25 (currently amended): The method of claim 22 wherein said liquid crystalline material further comprises a surfactant operative to ~~increase~~ decrease transition ~~speed~~ time of said liquid crystalline material between ~~at least one of~~ said ~~first and second~~ transparent ~~states~~ state and said transient light scattering state.

Claim 26 (currently amended): A method of ~~creating three-dimensional images~~ using a liquid crystalline material as a transient light scattering shutter, ~~said method~~ comprising the steps of:

~~transforming~~ providing said ~~shutter~~ liquid crystalline material ~~into~~ in a ~~first~~ transparent state, wherein said liquid crystalline material comprises a chiral liquid crystal;

transforming said ~~shutter~~ liquid crystalline material from said transparent state into a transient light scattering state; and

transforming said ~~shutter~~ liquid crystalline material from said transient light scattering state into ~~a second~~ said transparent state.

Claim 27 (currently amended): The ~~method~~ system of claim ~~26~~ 11 ~~further comprising~~ wherein said liquid crystalline material transmits ~~transmitting~~ greater than about 85% of incident visible spectrum light while in said ~~first~~ transparent state.

Claim 28 (currently amended): The ~~method~~ system of claim ~~26~~ 11 ~~further comprising~~ wherein said liquid crystalline material transmits ~~transmitting~~ less than about 1% of incident visible spectrum light while in said transient light scattering state.

Claim 29 (currently amended): The ~~method~~ system of claim ~~26~~ 28 ~~further comprising~~ wherein said liquid crystalline material transmits ~~transmitting~~ less than about 0.5% of incident visible spectrum light while in said transient light scattering state.

Claim 30 (currently amended): The ~~method~~ system of claim ~~26~~ 29 ~~further comprising~~ wherein said liquid crystalline material transmits ~~transmitting~~ less than about 0.1% of incident visible spectrum light while in said transient light scattering state.

Claim 31 (canceled)

Claim 32 (currently amended): The ~~method~~ in claim ~~26~~ 11 ~~further comprising~~ wherein said liquid crystalline material scatters ~~scattering~~ light of a spectrum selected from the group consisting of ~~the~~ visible spectrum, ~~the~~ ultraviolet spectrum, ~~the~~ near-infrared spectrum, and ~~the~~ infrared spectrum while in said transient light scattering state.

Claim 33 (currently amended): The method of claim 26 further comprising the step of heating said ~~shutter~~ liquid crystalline material to ~~increase~~ decrease transition ~~speed~~ time of said liquid crystalline material between ~~at least one of~~ said ~~first and second~~ transparent ~~states~~ state and said transient light scattering state.

Claims 34-35 (canceled)

Claim 36 (currently amended): The method of claim ~~35~~ 33 wherein said step of heating comprises the step of heating said liquid crystalline material to about 65° C.

Claim 37 (canceled)

Claim 38 (currently amended): The method of claim ~~35~~ 33 wherein said ~~switching from a first transparent state comprises switching~~ transition time of said liquid crystalline material from ~~a first~~ said transparent state to [[a]] said transient light scattering state ~~in~~ is about 0.34 msec.

Claim 39 (currently amended): The method of claim ~~35~~ 33 wherein said ~~switching from said transient light scattering state comprises switching~~ transition time of said liquid crystalline material from said transient light scattering state to said ~~second~~ transparent state ~~in~~ is about 0.45 msec.

Claim 40 (currently amended): A method of ~~creating three-dimensional images~~ using ~~a transient light scattering shutter, said shutter comprising~~ a liquid crystalline material ~~disposed between first and second conducting layers~~ as a transient light scattering shutter, ~~said material comprising a chiral liquid crystal, said method~~ comprising the steps of:

providing said liquid crystalline material comprising a chiral liquid crystal capable of forming a transparent state and a transient light scattering state;

~~applying zero voltage to said first conducting layer;~~

applying ~~to said second conducting layer a positive~~ across said liquid crystalline material a first voltage operative to ~~make~~ provide said liquid crystalline material in said transparent state;

~~decreasing~~ adjusting said ~~positive~~ first voltage ~~at said second conducting layer~~ to zero ~~volts~~ volt to ~~cause~~ switch said liquid crystalline material ~~to form~~ from said transparent state to [[a]] said transient light scattering state;

~~holding said zero volts at said second conducting layer;~~ and

~~decreasing the~~ applying across said liquid crystalline material a second voltage ~~at said second conducting layer from zero volts to a negative voltage~~ operative to ~~make~~ switch said liquid crystalline material from said transient light scattering state to said transparent state.

Claim 41 (currently amended): The method of claim 40 wherein said ~~holding~~ step of adjusting said first voltage comprises the step of holding said zero volt ~~volts at said second conducting layer~~ across said liquid crystalline material for about two milliseconds.

Claims 42-46 (canceled)

Claim 47 (new): The transient light scattering shutter of Claim 1, wherein said varying voltage is an AC voltage.

Claim 48 (new): The transient light scattering shutter of Claim 1, wherein said varying voltage is a unipolar voltage.

Claim 49 (new): The system of Claim 11, wherein said varying voltage is an AC voltage.

Claim 50 (new): The system of Claim 11, wherein said varying voltage is a unipolar voltage.

Claim 51 (new): The system of Claim 11, wherein said varying voltage is a DC bipolar voltage.

Claim 52 (new): The method of Claim 22, wherein said first electric field and said second electric field are in same direction.

Claim 53 (new): The method of Claim 40, wherein said first voltage and said second voltage have opposite polarities.

Claim 54 (new): The method of Claim 40, wherein said first voltage and said second voltage have same polarities.

Claim 55 (new): The transient light scattering shutter of Claim 1, wherein said varying voltage comprises a periodic waveform to allow adjustment of both a repetition rate and a duration of said liquid crystalline material in said transient light scattering state.

Claim 56 (new): The transient light scattering shutter of Claim 55, wherein the slope of said periodic waveform controls said duration.

Claim 57 (new): The transient light scattering shutter of Claim 55, wherein said periodic waveform is a truncated triangular wave.

Claim 58 (new): The system of Claim 11, wherein said varying voltage comprises a periodic waveform to allow adjustment of both a repetition rate and a duration of said liquid crystalline material in said transient light scattering state.

Claim 59 (new): The system of Claim 58, wherein the slope of said periodic waveform controls said duration.

Claim 60 (new): The system of Claim 58, wherein said periodic waveform is a truncated triangular wave.

Claim 61 (new): A method of using a liquid crystalline material as a transient light scattering shutter, comprising the steps of:

providing said liquid crystalline material comprising a chiral liquid crystal capable of forming a transparent state and a transient light scattering state;

providing a voltage source capable of providing a varying voltage in a periodic waveform;

adjusting the slope of said periodic waveform to control a duration of said liquid crystalline material in said transient light scattering state; and

applying said varying voltage across said liquid crystalline material.

Claim 62 (new): The method of Claim 61, wherein said periodic waveform is a truncated triangular wave.